"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

STOTSKIY, L.F., kand.tekhn., nauk; KALASHNIKOV, N.V., kand.tekhn.nauk

SI - the International System of Units. Stroi.mat. 9 no.3: 36-38 Mr '63. (MIRA 16:4)

(Units)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

STOTSKIY, L.R., kand.tekhn.nauk; KALASHNIKOV, N.V., kand.tekhn.nauk

International system of units and its use in design and construction.
Prom. stroi. 40 [i.e. 41.] no.3:50-54 Mr '63. (MIRA 16:3)
(Units).

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KALASHNIKOV, N.V.

Genus Davidsonina from the Carboniferous of the Northern Urals.
Paleont. zhur. no.2:43-53 '63. (MIRA 16:8)

1. Institut geologii Komi filiala AN SSSR.
(Ural Mountains--Mollusks, Fossil)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

BURDUN, Grigoriy Dmitriyevich, prof.; KALASHNIKOV, Nikolay Vasil'yevich; STOTSKIY, Lev Rudol'fovich; VUKALOVICH, M.P., prof., doktor tekhn. nauk, laureat Leninskoy premii, retsenzent; SHIROKOV, K.P., doktor tekhn. nauk, retsenzent; PERKOVSKAYA, G.Ye., red.

[International system of units] Mezhdunarodnaia sistema edinits. Moskva, Vysshaia shkola, 1964. 273 p. (MIRA 17:11)

1. Rukovoditel' kafedry teoreticheskikh osnov teplotekhniki Moskovskogo energeticheskogo instituta (for Vukalovich).
2. Rukovoditel' metrologicheskogo otdela Vsesoyuznogo nauchno-issledovatel'skogo instituta metrologii im. D.I. Mendeleyeva (for Shirokov).

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KALASHNIKOV N. YA.

COUNTRY : USSR
CATEGORY : Plant Diseases. Diseases of Cultivated Plants

ABS. JOUR. : RZhBiol., No. 21 1958, No. 90255

AUTHOR : Kalashnikov, N.Ya., Shkurenko, G.S.
INST. : -
TITLE : Single-Phase Disinfection of Wheat Seeds

ORIG. PUB. : Peredov. Opyt v S.-Kh. Kazakhstana, 1955, No.1, 17-18

ABSTRACT : Two-year tests carried out in the Kustanayskiy experimental station showed the expediency of a thermal disinfection of wheat from wheat smut by the single-phase process. The electrode arrangements and methods of processing are described.

CARD: 1/1

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

LOSEV, Lev Semenovich, st. nauchn. sotr.; GLUSHKOV, Aleksandr Ivanovich; KOLCHINSKAYA, V.I., red.; POTASHOVA, V.P., red.; KALASHNIKOV, O.D., spets. red.; MINDER, L.P., spets. red.

[Klipfish] Klipfisk. Murmansk, Murmanskoe knizhnoe izd-vo 1965. 32 p. (MIRA 19:1)

1. Polyarnyy institut rybnogo khozyaystva i okeanografii (for Losev). 2. Nachal'nik otdela ryborazdelochnykh mashin Polyarnogo instituta rybnogo khozyaystva i okeanografii (for Glushkov).

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KALASHNIKOV, O.O. [Kalashnykov, O.H.], kand.tekhn. nauk.

Increasing the life of tractors and agricultural machinery.
Mekh. sil'. hosp. 9 no.2:22-24 F '58. (MIRA 11:3)
(Tractors) (Agricultural machinery)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KALASHNIKOV, O.N., inzh.; KARLIN, P.I.

The Ivanovka Hydraulic Mine Collective prepares to welcome the 22d Congress with suitable achievements. Ugol' Ukr. 5 no.10:14-16 O '61. (MIRA 14:12)
(Donets Basin--Coal mines and mining)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KARLIN, P.I., inzh.; BURAVLEV, A.I., inzh.; KALASHNIKOV, O.N., inzh.; VASIL'YEV, Ye.F., inzh.

Studying ways of increasing labor productivity in mining systems with sublevel hydraulicking as used at the Yanovka hydraulic mine. Ugol' 40 no.11:47-51 '65. (MIRA 18:11)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

AUTHORS: Panchenkov, G.M., Semiokhin, I.A., Kalashnikov, O.P. 76-10-8/34

TITLE: Separation of Stable Nitrogen Isotopes according to the Chemical Exchange Method. II. (Razdeleniye stabil'nykh izotopov azota metodom khimicheskogo obmena. II.)

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1957, Vol. 31, Nr 10, pp. 2224-2228 (USSR)

ABSTRACT: The influence of the flow velocity and the temperature on the separation of the nitrogen isotopes is investigated in a counter flow column according to the reaction

$$N^{15}H_{3(r)} + N^{14}H_4NO_{3(p-p)} \rightleftarrows N^{14}H_{3(r)} + N^{15}H_4NO_{3(p-p)}.$$

It is shown that the time for obtaining a stationary state is reduced with the flow velocity and the temperature rise. It is detected that an optimum flow velocity (solution inlet, return of the ammonia into the column resp.) exists under the conditions prevailing in the device. At this optimum current velocity the maximum separation of the nitrogen isotopes is obtained. It is shown that the total coefficient of the isotope concentration is reduced at an increase of temperature from 20^0 to 40^0 (in all flow velocities investigated here) in order to

Card 1/2

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KORBUT, L.A.; BUYANOV, A.I.; SVIRSHCHEVSKIY [deceased]; KALASHNIKOV, P.A., redaktor; KUCHUMOV, P.S.; MAUMOV, V.I., redaktor; UDALOV, A.G., tekhnicheskiy redaktor.

[Organizational and technical specifications for tractor work in machine-traktor stations] Organizatsionno-tekhnicheskie pravila proizvodstva traktornykh rabot v mashinno-traktornykh stantsiiakh. Izd. 2oe, perer. i dop. Moskva, Izd-vo Ministerstva sel'skogo khoziaistva SSSR, 1955. 336 p. (MLRA 9:4)

1.Russia (1923- U.S.S.R.) Glavnoye upravleniye mashinno-traktornykh stantsii i mekhanizatsii. 2. Zamestitel' ministra sel'skogo khozyaystva SSSR (for Kuchumov).
(Machine-tractor stations)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KALASHNIKOV, P.A.

ANDON'YEV, S.M.; ZHLOBINSKIY, Ye.I.; YUR'YEV, M.A.; STRUGATSKIY, L.F.; YELISEYEV, B.V.; TSELUYKO, Yu.I.; SUVOROV, A.I.; FILIP'YEV, O.V.; KALASHNIKOV, P.A.; L'VOV, V.N.; SULOYEV, V.A.

Evaporation cooling of rolling-mill heating furnaces in open-hearth-furnace plants and complex utilization of secondary power resources. Prom. energ. 14 no.1:37-39 Ja '59. (MIRA 12:1)
(Furnaces, Heating) (Boilers)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KUTOVOY, Ivan Denisovich; FEDOSEYEV, Aleksandr Mikhaylovich; KALASHNIKOV, P.A., inzh., red.; YATSENKO, V.A., inzh., retsenzent; PAL'KO, O.S., red.izd-va; CHERNOVA, Z.I., tekhn.red.

[Manual on the equipment of collective farm repair shops] Spravochnik po oborudovaniiu kolkhoznykh remontnykh masterskikh. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1960. 180 p. (MIRA 13:10)
(Agricultural machinery--Maintenance and repair)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

GEL'MAN, B.M.; KALASHNIKOV, P.A., spetsred.; STREL'TSOVA, N.P., red.; ABELIN, P.G., khudozh.-tekhn.red.

[Maintenance of tractors] Tekhnicheskii ukhod za traktorami. Leningrad, Izd-vo M-va sel'.khoz.SSSR, 1961. 99 p. (MIRA 14:2)

1. Zaveduyushchiy metodicheskim kabinetom Borovskogo uchilishcha mekhanizatsii sel'skogo khozyaystva Kaluzhskoy oblasti (for Gel'man).

(Tractors--Maintenance and repair)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

L'VOV, Aleksey Andreyevich; KALASHNIKOV, P.A., red.

[Mechanization and electrification of agriculture] Mekhanizatsiia i elektrifikatsiia sel'skogo khoziaistva. Izd.2., perer. Moskva, Kolos, 1965. 422 p. (MIRA 18:2)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KHACHAPURIDZE, P.I.

Determining the hydraulic connections between burnt-out areas and boreholes with the help of water filling. Trudy VNIIPodzemgaza no.12:90-93 '64. (MIRA 18:9)

1. Laboratoriya gidrogeologicheskaya Vsesoyuznogo nauchno-issledovatel'skogo instituta podzemnoy gazifikatsii ugley.

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KALASHNIKOV, P.I.

Hydrogeological conditions of a section at the Angren underground gasification station and their importance relative to the underground gasification of coal. Nauch. trudy VNIIPodzemgaza no.8:35-50 '62. (MIRA 16:6)

1. Laboratoriya gidrogeologicheskaya Vsesoyuznogo nauchno-issledovatel'skogo instituta podzemnoy gazifikatsii ugley.
(Angren Basin—Coal gasification, Underground)
(Water, Underground)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

SPRINTSYN, M.N.; AMALITSKIY, V.M.[deceased]; DENIS'YEV, V.I.; ZHUKOV, A.M.; LIKHOVIDOV, N.K.; SHCHEDRIN, B.Ye.; KAFTANOVSKIY, G.M.; SUKHANOVSKIY, A.I.; TSVETKOV, V.A.[deceased]; MITEL'MAN, Ye.L.; KALASHNIKOV, P.L.; ANDREYEV, I.I., retsenzent; SALTYKOV, M.I., otv. red.; SLUTSKER, M.Z., red. izd-va; GRECHISHCHEVA, V.I., tekhn. red.

[Handbook for the logging enterprise economist]Spravochnik ekonomista Lespromkhoza. Moskva, Goslesbumizdat, 1962. 291 p. (MIRA 16:1)

(Lumbering--Handbooks, manuals, etc.)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KALASHNIKOV, Petr Leont'yevich; BAKHTIYAROV, V.D., inzh., retsenzent; YARMOLINSKIY, A.S., inzh., retsenzent; AKINDINOV, M.V., red.; KIMMEL', L.S., red.izd-va; AKOPOVA, V.M., tekhn. red.

[Commercial study of wood and forest products] Drevesinovedenie i lesnoe tovarovedenie. Moskva, Goslesbumizdat, 1963. 253 p. (MIRA 16:12)
(Forest products)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KUKSOV, Vasiliy Alekseyevich; KUKSOV, Yuriy Vasil'yevich;
KALASHNIKOV, P.L., nauchn. red.; NAZARENKO, M.I., red.

[Study of materials for joiners and carpenters] Materialovedenie dlia stoliarov i plotnikov. Izd.3., perer. i dop. Moskva, Vysshaia shkola, 1964. 293 p. (MIRA 18:2)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KALASHNIKOV, P. M.

124-58-9-9855

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 9, p 55 (USSR)

AUTHOR: Kalashnikov, P. M.

TITLE: The Hydraulic Design Calculation of Triangular Canals Based on the Characteristics of Their Active Cross-Section (Gidravlicheskiy raschet treugol'nykh kanav po kharakteristike ikh zhivogo secheniya)

PERIODICAL: Sb. nauchn. tr. Belorussk. lesotekhn. in-t, 1957, Nr 10, pp 249-258

ABSTRACT: The Author applies I. I. Agroskin's calculation method for trapezoidal canals based on their effective cross-section characteristics (Gidrotekhnika i melioratsiya, 1953, Nr 9, pp 14-32; RzhMekh, 1955, Nr 4, abstract 1840) to the calculation of canals with triangular cross section having embankments with equal and unequal slopes. Auxiliary graphs are adduced, also a computational example.

1. Inland waterways--Mathematical analysis

V. V. Fandeyev

Card 1/1

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

POLUKHIN, V.P.; SKORUPSKIY, V.I.; POLYASHOV, V.S.; KALASHNIKOV, P.P.

Optimal hardness and the elastic deformation of rolls on four-high mills. Izv. vys. ucheb. zav.; chern. met. 8 no.1: 78-84 '65 (MIRA 18:1)

1. Moskovskiy institut stali i splavov.

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

POLUKHIN, V.P.; NIKOLAYEV, V.A.; KALASHNIKOV, P.P.

Modeling contact and contact area stresses for the case of flat rolling. Izv.vys.ucheb.zav.; chern.met. 8 no.6:101-107 '65.
(MIRA 18:8)

1. Moskovskiy institut stali i splavov.

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

YELIZAROVSKIY, S.I., prof.(Arkhangel'sk, nab. Stalina, d.93, kv.6);
KALASHNIKOV, R.N.

Evaluation of direct punctures of the thoracic aorta. Vest.khir. 86 no.3:60-66 Mr '61. (MIRA 14:3)

1. Iz kafedry operativnoy khirurgii (zav. - prof. S.I. Yelizarovskiy) Arkhangel'skogo meditinskogo instituta.
(AORTA--SURGERY) (PUNCTURES)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KALASHNIKOV P. S.

USSR/Diseases of Farm Animals. Noninfectious Diseases R-2

Abs Jour : Ref Zhur-Biol., No 2, 1958, 2765

Author : Muzafarov K. F., Kalashnikov P. S., Muromtsev K.B
Inst : Stavropol' Agricultural Institute
Title : On the Problem of Enzootic Ataxia in Lambs

Orig Pub : Tr. Stavropol'sk. s-kh, in-ta, 1956, vyp 7, 393-400

Abstract : Outbreaks of enzootic ataxia (EA) in lambs occurred in Northern Caucasus on farms with similar natural-geographic and soil conditions and with poor and single-type vegetation. In flocks favorable to the development of EA the author found a large number of ewes with anemia and disturbed metabolism. In these flocks the lambs were born weak or underdeveloped either with symptoms or without symptoms of EA. The author regards EA

Card 1/2

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

BELYAYEVA, V.A.; ZAKHVALINSKIY, M.N.; ZIMINA, T.D.; DEMINA, T.N.; KALASHNIKOV, P.V.; NAGORNAYA, Yo.F.; NAGORNYY, G.I.; TITOVA, T.P.

Adsorption properties of Gymyl' argillites. Trudy DVFAN SSSR. Ser.khim. no.7:18-25 '65.

(MIRA 18:12)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KALASHNIKOV, R.N.

The fate of a vascular suture in a growing body. Khirurgiia 33 no.8:64-68 Ag '57. (MIRA 11:4)

1. Iz kafedry operativnoy khirurgii (zav.-prof. S.I. Yelizarovskiy) Arkhangel'skogo meditsinskogo instituta.
(BLOOD VESSELS, surg.
exper., suture, fate in growing body)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

YELIZAROVSKIY, S.I., prof.; KALASHNIKOV, R.N.

Comments on lumbar aortography. Khirurgiia 37 no.5:16-21 My '61. (MIRA 14:5)

1. Iz kafedry operativnoy khirurgii (zav. - prof. S.I. Yelizarovskiy) Arkhangel'skogo meditsinskogo instituta.
(AORTA—RADIOGRAPHY) (ANGIOGRAPHY)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KALASHNIKOV, R.N. (Arkhangel'sk, prosp. Vinogradova, d.160, kv.7);
DEMIDOV, G.I.

Some physiological reactions observed in metal osteosynthesis.
Ort. travm. i protez. 23 no.10:31-34 O '62.
(MIRA 17:10)

1. Iz kafedry operativnoy khirurgii (zav.- prof. S.I. Yelizarovskiy)
Arkhangel'skogo meditsinskogo instituta.

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KALASHNIKOV, S.

The present and future of vocational and technical schools.
Prom.koop. 13 no.2:25-26 F '59. (MIRA 12:4)

1. Zamestitel' direktora proftekhshkoly, g. Stanislav.
(Stanislav--Cooperative societies)
(Technical education)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KALASHNIKOV, S.

Students of a technical school at practical work. Prom.koop. 13 no.9:31 S '59. (MIRA 13:1)

1. Zamestitel' direktora Stanislavskoy proftekhshkoly khudozhestvennoy mebeli, g.Stanislav.
(Education, Cooperative)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KALASHNIKOV, S.

Here they train master workers. Prom.koop. 14 no.9:6 S '60.
(MIRA 13:9)

1. Zamestitel' direktora professional'no-tekhnicheskogo uchilishcha khudozhestvennoy mebeli, g. Stanislav.
(Stanislav--Vocational education)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KALASHNIKOV, S.

This is the way to operate. Voen.znan. 36 no.11:34 N'60;
(MIRA 13:11)

1. Chlen komiteta Vsesoyuznogo ordena Krasnogo Znameni dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu; zamestitel' direktora proftekhuchilishcha (g.Stanislav).
(Stanislav--Life saving)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

RAKOVITSA, Yu.; MASLOV, A.; KALASHNIKOV, S. (g.Stanislav)

Letters to the editor. Voen. znan. 37 no.11:25 N '61.
(MIRA 14:11)

1. Chlen Dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu, g. Kitsman', Chernovitskoy obl. (for Rakovitsa). 2. Nachal'nik rayonnoy shkoly grazhdanskoy oborony, pos.Ordzhonikidze, Tashkentskoy oblasti (for Maslov).
(Military education)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

ACCESSION NR: AP4045322 S/0209/64/000/006/0085/0090

AUTHOR: Kalashnikov, S. (Lt. Col.)

TITLE: Methods of quality control through the use of instrumentation. 2. Color defectoscopy

SOURCE: Aviatsiya i kosmonavtika, no. 6, 1964, 85-90

TOPIC TAGS: quality control, flaw detection, defectoscopy, defectoscope DMK-4

ABSTRACT: The author describes the essential features of the color flaw detection method which is widely used in the aviation industry for the quality control of parts manufactured of non-magnetic materials. A liquid, having high penetrability and colored bright red, is applied to a surface which has been cleaned in advance. Under the influence of the capillary forces, the liquid penetrates into the narrow surface flaws of the part. The excess liquid is then removed from the part, followed at once by application of a white developing dye which adsorbs the liquid which has entered the cavity of the crack. After a certain period of time, against a white or light-pink background, a red outline is formed which indicates the location of the fault. Two separate control arrangements are shown diagrammatically in the article and fully discussed. The author analyzes the different types of flaws and defects which can and cannot be detected by this method, considers

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ACCESSION NR: AP4045322

sensitivity and reliability factors, and describes the process to be followed in the manufacture of standard samples to be used in estimating the sensitivity of the dyes and liquids used in the method. Methods for removing accumulated contamination from the cavity of the crack in the working standard are discussed (supersonic bath in an environment of acetone or some other solvent, etc.). Techniques are suggested for determining, during such a cleansing process, the quality of both the penetrating liquid and the developing dye previously used with the standard. The problem of the "keeping properties" of liquids and dyes and of the possible restoration of these properties during field conditions is also taken up briefly in the article, as well as considerations relating to the preparation of the surface of parts to be tested. Several methods for removing contaminants (fatty substances, combustion products, etc.) are analyzed (gasoline washing, heating, compressed air treatment, anodizing, etc.). The author concentrates his attention principally on anodizing for the preliminary preparation of heat-resistant materials and alloys and presents a number of interesting details and suggestions with respect to this method. Various techniques which may be used in the actual application of the penetrating liquids and developing dyes, depending on the area to be tested, the type of materials used and the nature of the suspected flaws, are analyzed from the point of view of their suitability under different operational conditions. There is a similar consideration of the problem of the

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KALASHNIKOV, S. (Rogatinskiy rayon, Stanislavskoy oblasti)

In the front line. Mest.prom.i khud.promys. 2 no.2:26 F '61.
(MIRA 14:4)

(Stanislav Province--Gypsum)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KALASHNIKOV, S., podpolkovnik

Methods of instrument checking. Part 2:Color defectoscopy.
Av i kosm. 47 no.6:85-90 Je '64. (MIRA 17:7)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

AUTHOR: Kalashnikov, S. SOV/27-59-1-30/31

TITLE: The Right of Honor (Pochetnoye pravo)

PERIODICAL: Professional'no-tekhnicheskoye obrazovaniye, 1959, Nr 1, p 3 of cover (USSR)

ABSTRACT: In honor of the 21st Congress of the USSR Communist Party, the students of the Stanislavskaya professional'no-tekhnicheskaya shkola khudozhestvennoy mebeli (Stanislavskaya Technical Art School) have opened an exhibition showing "art" furniture. Recently, a similar exhibition was arranged in Kiyev, in which the above mentioned school also participated.

Card 1/1

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

"A Case of Acute Renal Insufficiency as a Complication of Hypothermia," by S. A. Kalashnikov, Chair of Pathological Anatomy (head, Prof P. V. Sipovskiy), Leningrad State Order of Lenin Institute for the Advanced Training of Physicians imeni S. M. Kirov, Vestnik Khirurgii imeni I. I. Grekova, Vol 78, No 6, Jun 57, pp 110-112

The case history of a 32-year-old patient suffering from pulmonary tuberculosis and subjected to general hypothermia is described. Postoperative symptoms were disturbances of renal circulation of a type closely akin to acute diffused glomerulonephritis, leading to uremia and terminating in the death of the patient. Histological studies of renal tissue revealed significant changes in Bowman's capsule, erythrocytes in renal canals, and other serious damages in renal capillaries.

This observation is of interest for it indicates that renal insufficiency may be a complication following the use of hypothermia. (U)

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

GOLUBEV, Sergey Gordeyevich; KALASHNIKOV, S.A., redaktor; ALTUF'YEVA, A.M., redaktor izdatel'stva; KONYASHINA, A., tekhnicheskiy redaktor

[Water supply for fire-fighting purposes on collective and state farms and at machine-tractor stations] Protivopozharnoe vodosnabzhenie kolkhozov, sovkhozov i MTS. Moskva, Izd-vo Ministerstva kommunal'nogo khoziaistva RSFSR, 1956. 126 p. (MLRA 10:1)
(Water supply, Rural)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KALASHNIKOV, S.A.

Problem of eosinophilic granulomas. Arkh. pat. 22 no. 6:73-75 '60. (MIRA 14:1)

(EOSINOPHILIC GRANULOMA)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

SHAMOV, V.N., prof.; KALASHNIKOV, S.A. (Leningrad)

Malignant degeneration of benign neoplasms. Khirurgiia 36 no.10: 32-39 O '60. (MIRA 13:11)

(CANCER)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

ALEKSANDROV, N.N.; KALASHNIKOV, S.A.

Specific form of a benign tumors of the stomach (from the glomus group). Vop.onk. 7 no.2:78-81 '61. (MIRA 14:5)
(STOMACH—TUMORS)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

L 53970-65

ACCESSION NR: [illegible]

UR/0241/65/010/004/0049/0053
515.949.1-033:611.951-033

AUTHOR: [illegible]

TITLE: [illegible] Colloidal Au 198 and histological changes in the [illegible] following its introduction into the abdominal cavity

SOURCE: [illegible], no. 4, 1965, 49-53, and insert facing

TOPIC TAGS: gold, abdomen, radiation injury, tumor, radioactive isotope, histology

[illegible] who had died of various complications [illegible] changes

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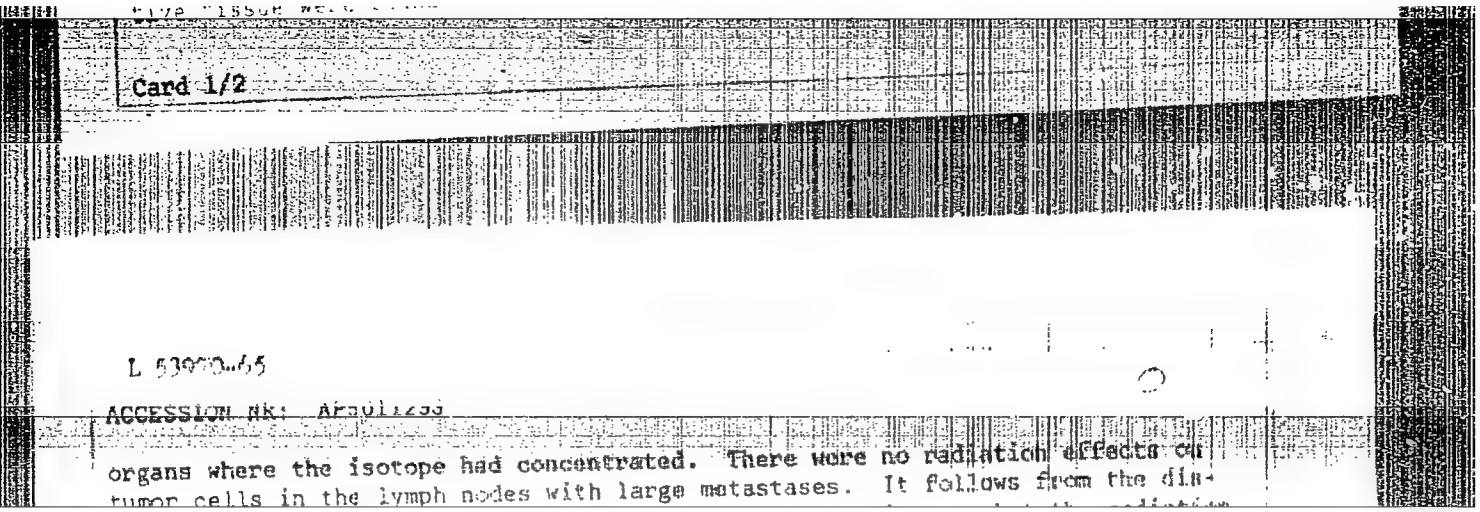

Card 1/2

L 53000-65

ACCESSION NR: AP5011233

organs where the isotope had concentrated. There were no radiation effects on tumor cells in the lymph nodes with large metastases. It follows from the dif-

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Card 2/2

NECHAY, A.I. (Leningrad, ul. Smirnova, 8, kv.53); KALASHNIKOV, S.A.

Morphological changes of the papilla duodeni major as a sign of stenosing papillitis. Vest. khir. 92 no.6:19-25 Je '64. (MIRA 18:5)

1. Iz fakul'tetskoy khirurgicheskoy kliniki imeni Fedorova (nachal'nik - prof. V.M. Sitenko) Voyenno-meditsinskoy ordena Lenina akademii imeni Kirova.

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

GUSEVA, Ye.M., dotsent; KALASHNIKOV, S.A.; PLOTKIN, L.L.

Lavsan as suture and ligation material. Vest. khir. 94 no.2: 79-82 F '65. (MIRA 18:5)

1. Iz fakul'tetskoy khirurgicheskoy kliniki (nachal'nik - prof. V.M. Sitenko) Voyenno-meditsinskoy ordena Lenina akademii imeni Kirova.

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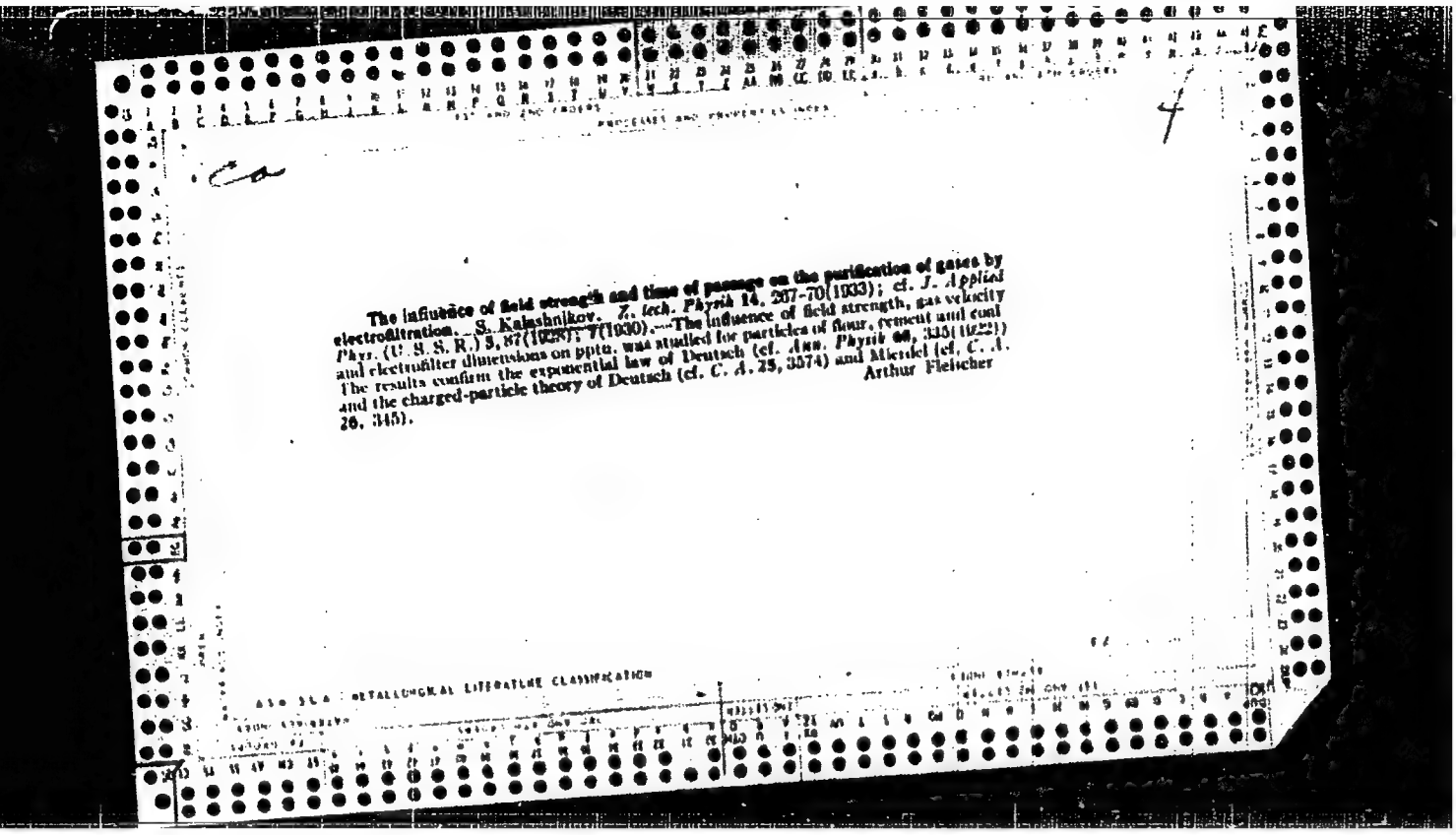

Ca

4

The influence of field strength and time of passage on the purification of gases by electrofiltration. S. Kalashnikov. *Z. tech. Physik* 14, 207-70(1933); cf. *J. Applied Phys.* (U. S. S. R.) 5, 87(1928); 7(1930).—The influence of field strength, gas velocity and electrofilter dimensions on ppte. was studied for particles of flour, cement and coal. The results confirm the exponential law of Deutsch (cf. *Ann. Physik* 68, 335(1922)) and the charged-particle theory of Deutsch (cf. *C. A.* 25, 3574) and Mierdel (cf. *C. A.* 26, 345).

Arthur Fleischer

ASB SLA METALLURGICAL LITERATURE CLASSIFICATION

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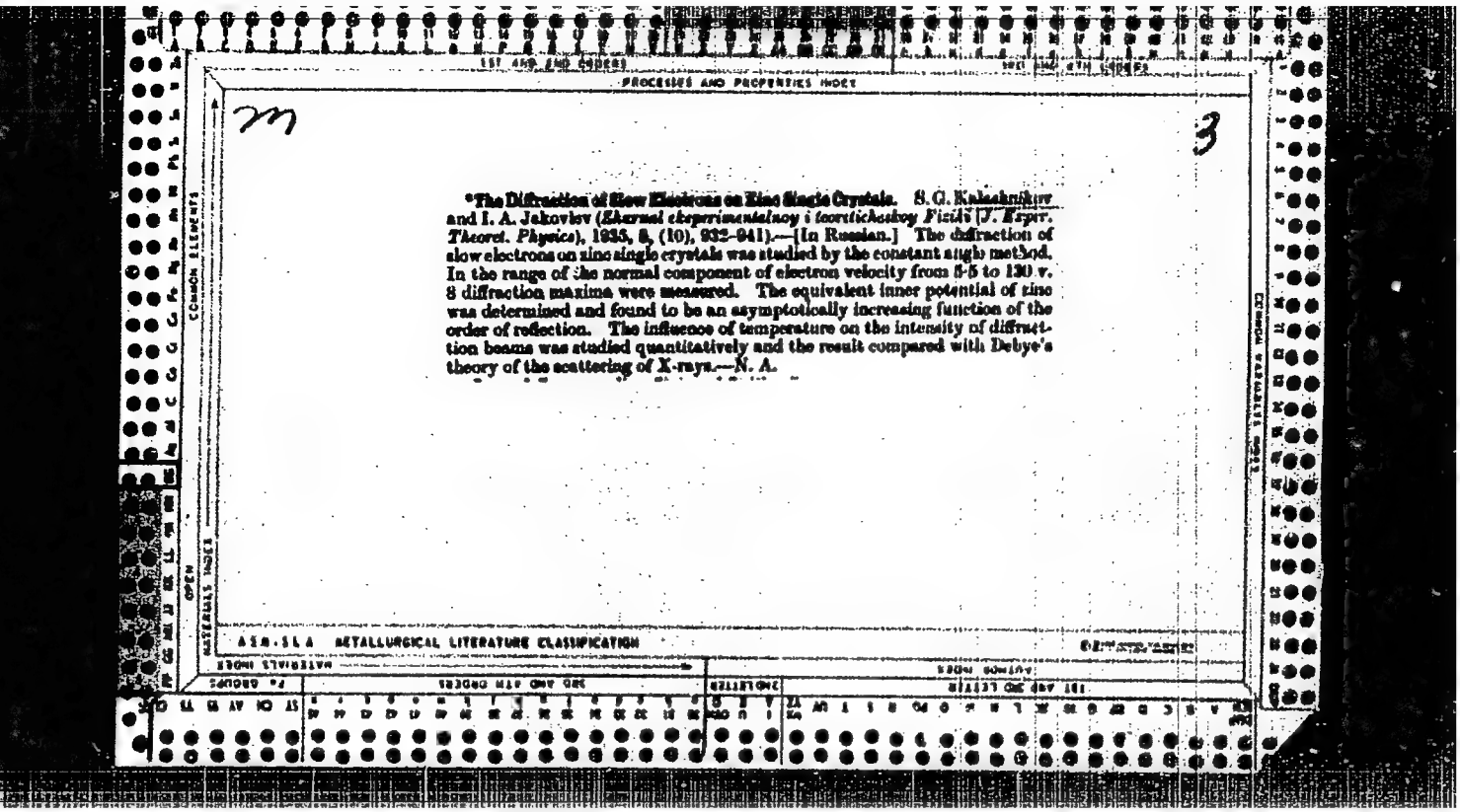

m

3

*The Diffraction of Slow Electrons on Zinc Single Crystals. S. G. Kalashnikov and I. A. Jakovlev (*Zhurnal eksperimentalnoy i teoreticheskoy Fiziki* [*J. Exper. Theoret. Physics*), 1935, 5, (10), 932–941).—[In Russian.] The diffraction of slow electrons on zinc single crystals was studied by the constant angle method. In the range of the normal component of electron velocity from 5·5 to 120 v. 8 diffraction maxima were measured. The equivalent inner potential of zinc was determined and found to be an asymptotically increasing function of the order of reflection. The influence of temperature on the intensity of diffraction beams was studied quantitatively and the result compared with Debye's theory of the scattering of X-rays.—N. A.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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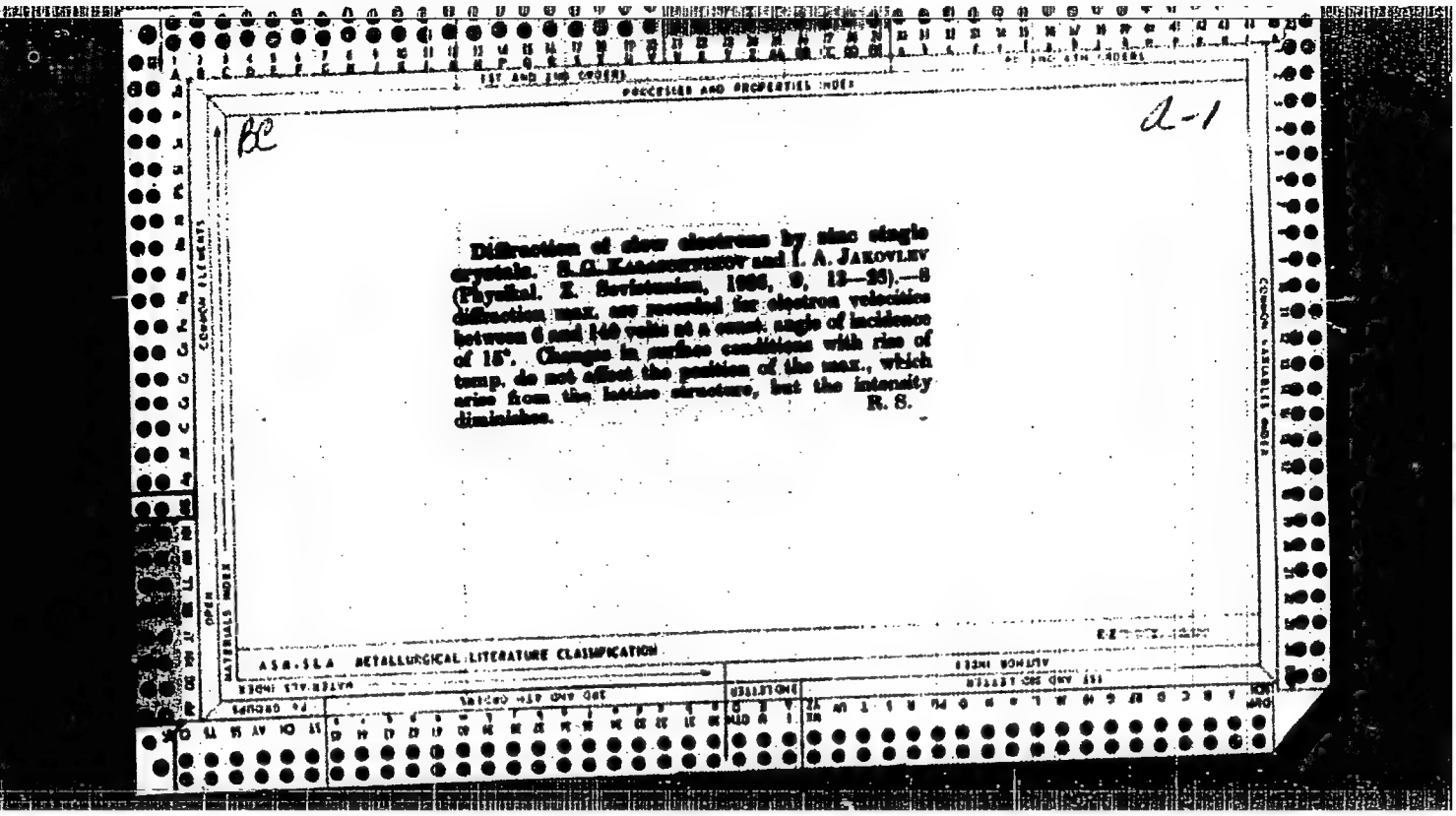

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

BC

a-1

Diffraction of slow electrons by zinc single crystals. S. G. Karasoutsikov and I. A. Jakovlev (Physikal. Z. Sovietunion, 1936, 9, 13—25).—8 diffraction max. are recorded for electron velocities between 6 and 140 volts at a const. angle of incidence of 15°. Changes in surface conditions with rise of temp. do not affect the position of the max., which arise from the lattice structure, but the intensity diminishes. R. S.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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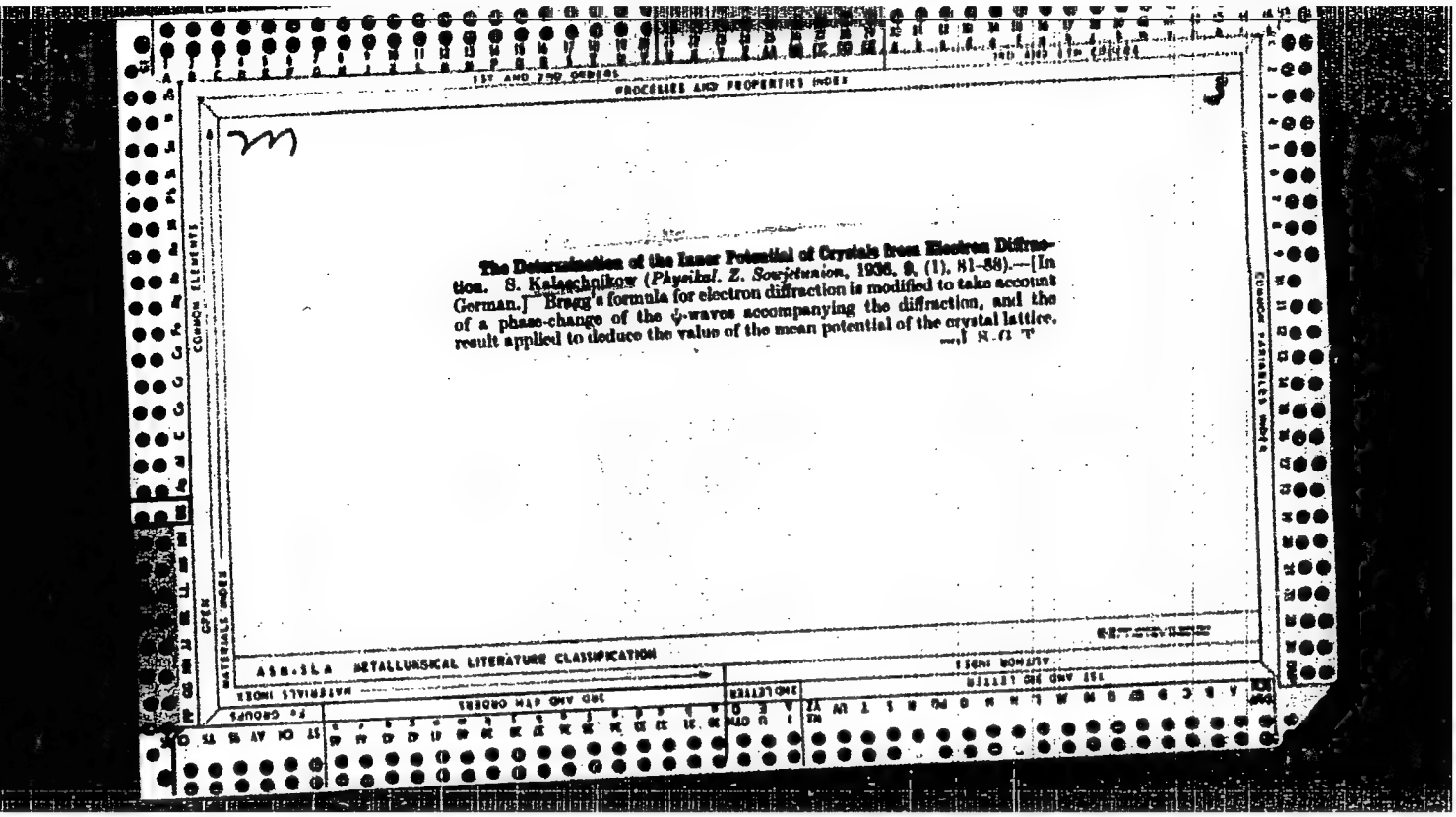

The Determination of the Inner Potential of Crystals from Electron Diffraction. S. Kalaschnikow (*Physikal. Z. Sowjetunion*, 1936, 9, (1), 81–88).—[In German.] Bragg's formula for electron diffraction is modified to take account of a phase-change of the ψ-waves accompanying the diffraction, and the result applied to deduce the value of the mean potential of the crystal lattice.

—[N.G. T.

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

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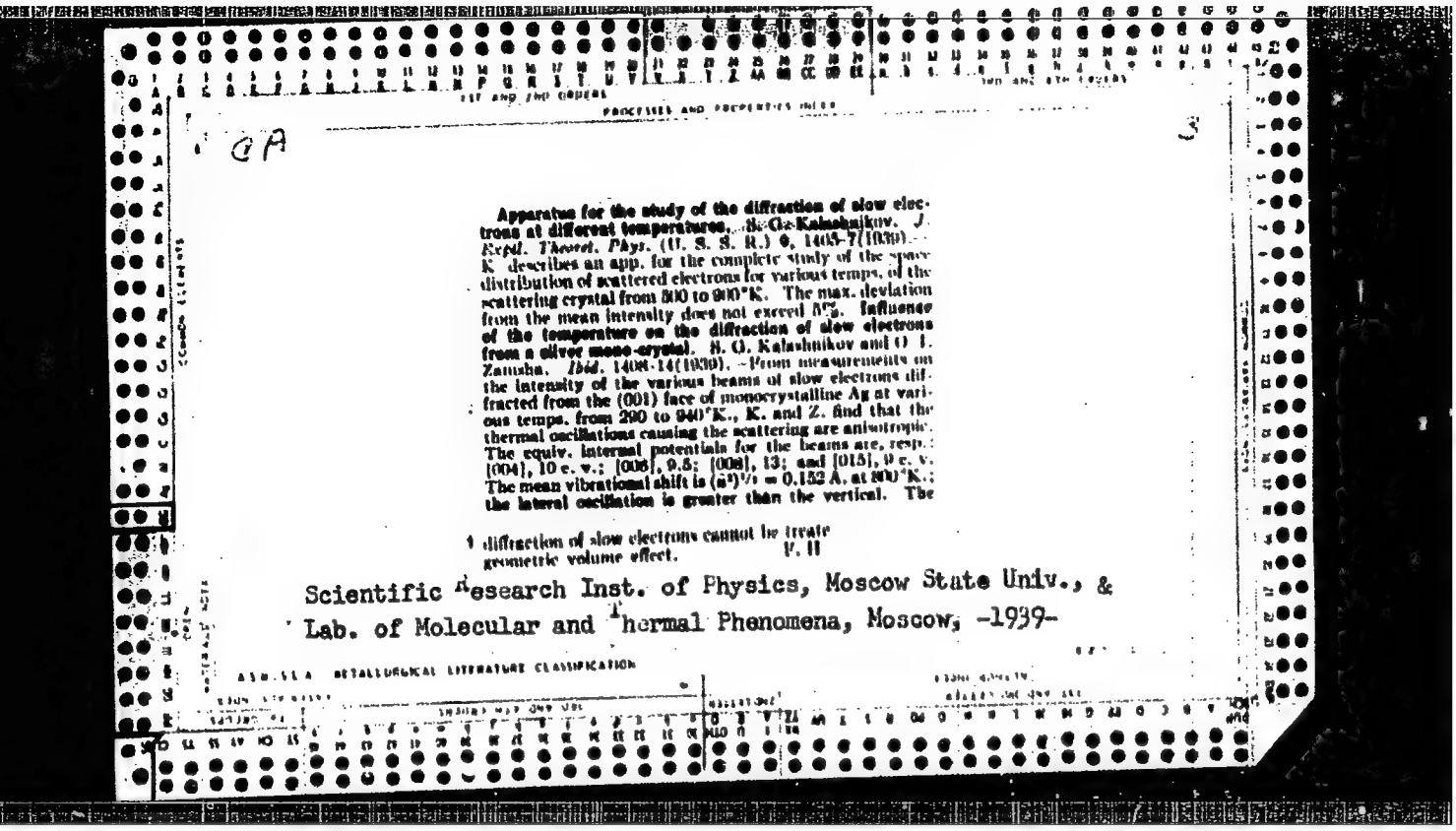

Apparatus for the study of the diffraction of slow electrons at different temperatures. S. G. Kalashnikov. *J. Exptl. Theoret. Phys.* (U. S. S. R.) 9, 1405-7(1939).—K describes an app. for the complete study of the space distribution of scattered electrons for various temps. of the scattering crystal from 300 to 900°K. The max. deviation from the mean intensity does not exceed 5%. Influence of the temperature on the diffraction of slow electrons from a silver mono-crystal. S. G. Kalashnikov and O. I. Zanuha. *Ibid.* 1408-14(1939).—From measurements on the intensity of the various beams of slow electrons diffracted from the (001) face of monocrystalline Ag at various temps. from 290 to 940°K., K. and Z. find that the thermal oscillations causing the scattering are anisotropic. The equiv. internal potentials for the beams are, resp.: [004], 10 e. v.; [006], 9.5; [008], 13; and [015], 9 e. v. The mean vibrational shift is $(\bar{u}^2)^{1/2} = 0.152$ Å. at 300°K.; the lateral oscillation is greater than the vertical. The

diffraction of slow electrons cannot be treate
geometric volume effect. V. H

Scientific Research Inst. of Physics, Moscow State Univ., & Lab. of Molecular and Thermal Phenomena, Moscow, -1939-

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

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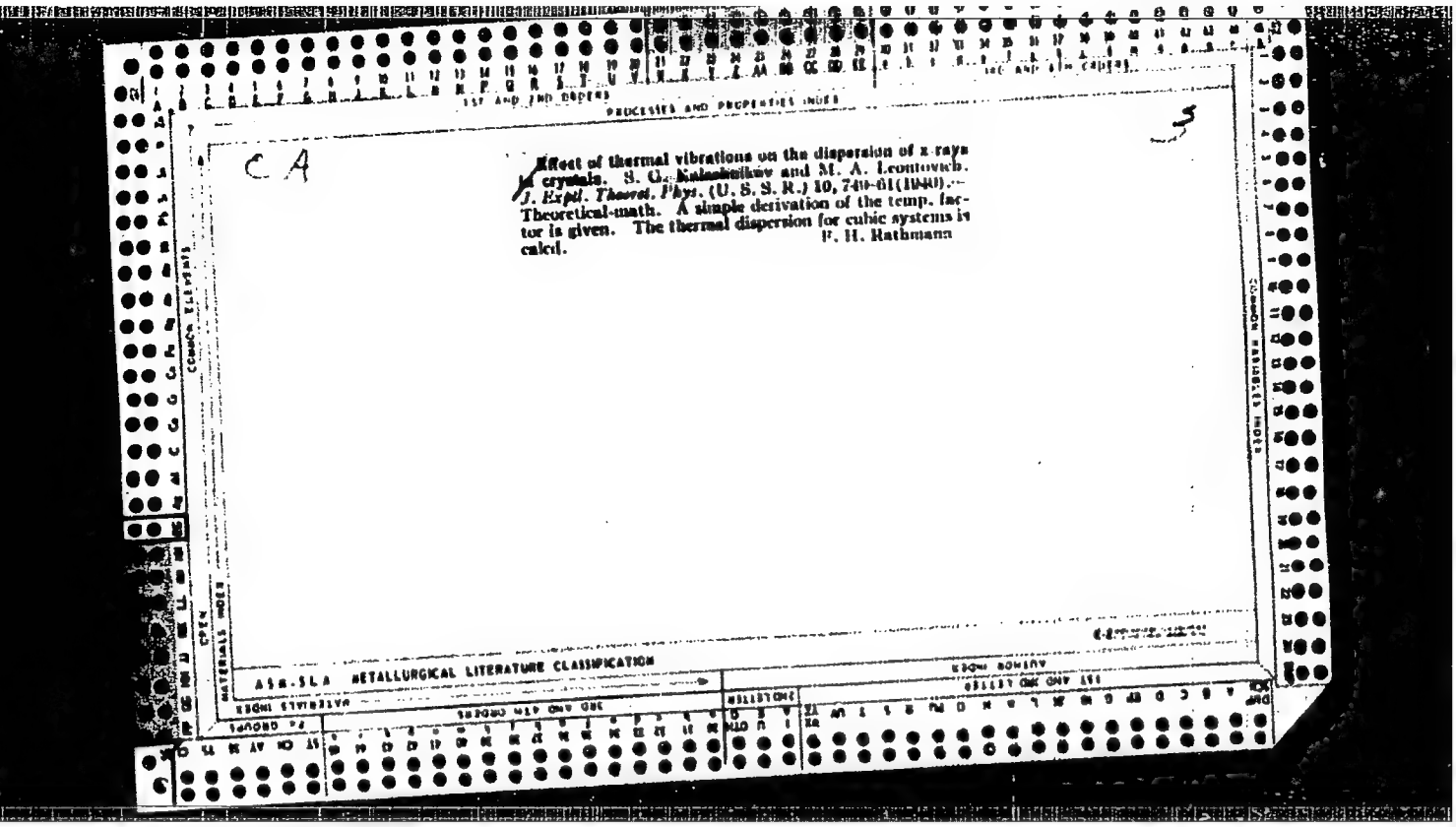


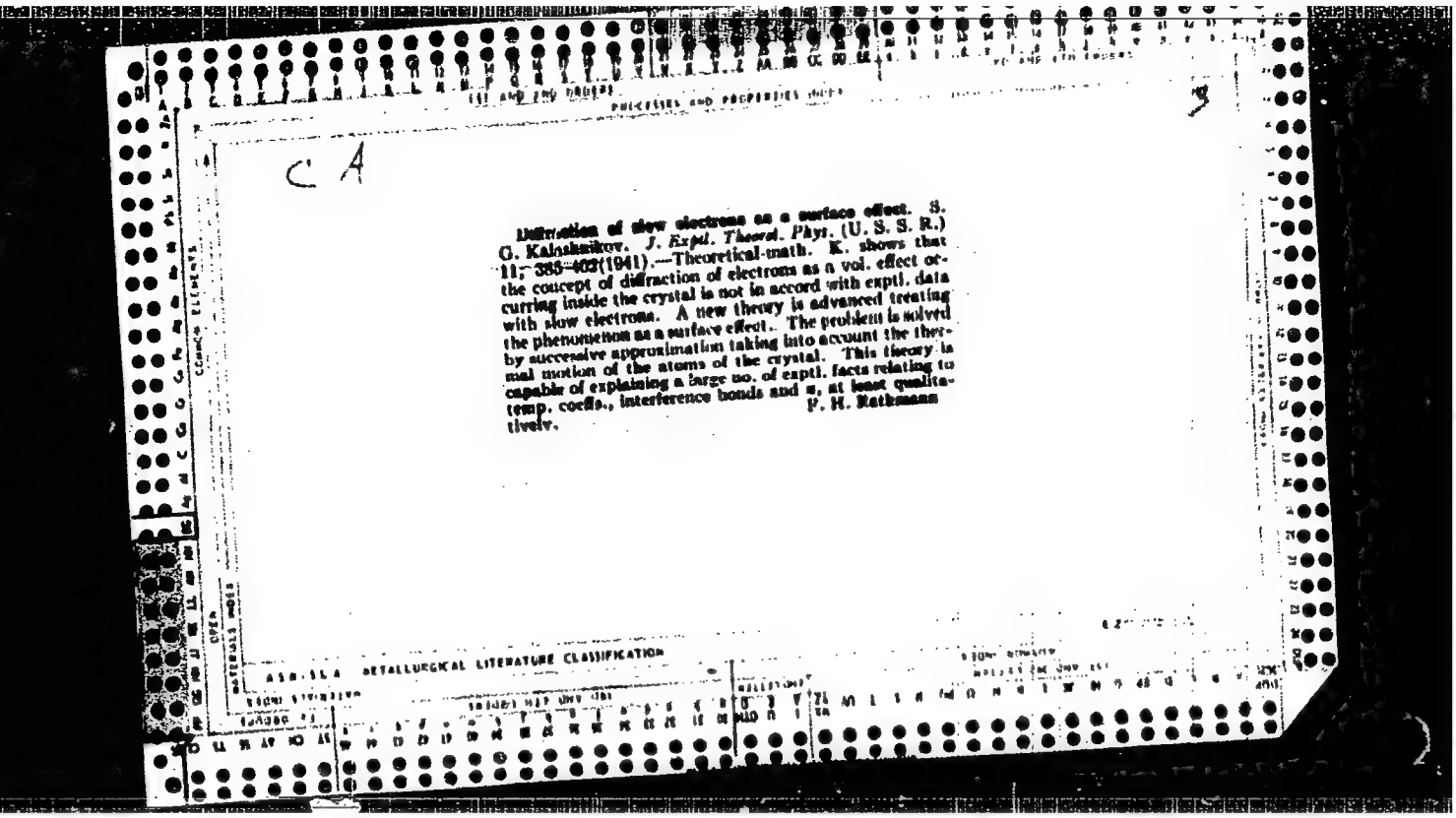
CA

Effect of thermal vibrations on the dispersion of x-rays in crystals. S. G. Kalashnikov and M. A. Leontovich. *J. Expil. Theoret. Phys.* (U. S. S. R.) 10, 749-61(1940).—Theoretical-math. A simple derivation of the temp. factor is given. The thermal dispersion for cubic systems is calcd.

P. H. Rathmann

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8



C A

Diffraction of slow electrons as a surface effect. S. G. Kalashnikov. *J. Expl. Theoret. Phys.* (U. S. S. R.) 11; 383–403(1941).—Theoretical-math. K. shows that the concept of diffraction of electrons as a vol. effect occurring inside the crystal is not in accord with expt. data with slow electrons. A new theory is advanced treating the phenomenon as a surface effect. The problem is solved by successive approximation taking into account the thermal motion of the atoms of the crystal. This theory is capable of explaining a large no. of expt. facts relating to temp. coeffs., interference bonds and s, at least qualitatively. P. H. Rathmann

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KALASHNIKOV, S. G.

"The Influence of Thermal Movement on the Surface Scattering of Light in Crystals," Zhur. Eksper. i Teoret. Fiz., 13, No1 7-8, 1943; (Lab. Molecular & Thermal Phenomena, Physics Inst., Moscow State Univ., -1943-.)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KALASHNIKOV, S. G.

"Impulse Emission of Oxide Cathodes," Zhur. Tekh. Fiz., 16, No. 12, 1946;
(Mbr. Central Sci. Research Inst., No. 108, -1946-.)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

METALLURGICAL LITERATURE CLASSIFICATION

KALASHIKOV, S. G.

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537.311.33

5404. Formation of barrier layers in alloys by means of chemical compounds. S. G. Kalashikov and L. N. Frastov. J. Tech. Phys., USSR, 21, 129-34 (Feb., 1951) In Russian.

According to Davydov's and Schottky's theories the explanation of the rectifying effedt is to be found in the curvature of the energy zones of a semi-conductor by a contact field. The direction of current passage must correspond to the metal with the lower work function, on which a negative potential is superimposed. This was demonstrated on suitable metals, i.e. Mg and Sb, and also on Zn. The intermetallic compounds of these metals, Mg_3Sb_2 and ZnSb, have high resistivity and may be obtained by welding. A. V. and A. F. Joffe's theory of solid rectifiers states that in the rectifying phenomenon the contact of two semiconductors of different character of semiconductivity (electronic and hole-semiconductivity) is essential. These propositions were confirmed on the said intermetallic compounds. B. F. Kraus

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KALASHNIKOV S. G.

USSR/Physics - Semiconductors

FD-3118

Card 1/1 Pub. 153 - 17/24

Author : Kalashnikov, S. G.; Penin, N. A.

Title : Influence of frequency upon the rectifier properties of semiconductors diodes in the case of small variable voltage

Periodical : Zhur. tekh. fiz., 25, No 6 (June), 1955, 1111-1123

Abstract : The authors show that the frequency dependence of rectified current in semiconductor diodes with high degree of ionization of admixtures and considerable electrical conductivity of the semiconductor which are operating at small alternating voltage can be explained by the existance of a capacitance of electron-hole transition due to both injection of charge carriers and also displacement current. They obtain simple expressions for the limiting frequency and frequency dependence of rectified current for various regimes of operation, and consider the influence of the characteristics of the semiconductor upon the frequency properties of the diodes. He thanks V. L. Bonch-Bruyevich for discussions. Five references, including two USSR: A. I. Gubanov, ZhTF, 22, 1952 and 23, 1953.

Institution :

Submitted : February 15, 1955

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KALASHNIKOV, S. G.

USSR/Physics - Semiconductors, Rectifying — Mar/Apr 52

"Formation of Rectifying Valve Layers by Means of Chemical Compounds in Alloys," S.G. Kalashnikov, L.P. Enastov

"Iz. Ak. Nauk, Ser Fiz" Vol XVI, No 2, p 154

Abbreviated text of report published in "Zhur Tekh Fiz" Vol XXI, No 2, 1951. Valve layer of intermetallic compd of stoichiometric proportion is formed during elec welding of contact between Mg or Zn with Sb. One electrode has the shape of an edge. Rectification coeff of Mg reaches 10^5. Volt-amp characteristics are not linear, but sym. After some time the resistance of the valve layer increases and the rectifying properties deteriorate.

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KALASHNIKOV, S.G.

USSR/Electricity - Resistance of Metals Apr 52

"Resistance of Metals at High Current Density in a Pulse System," L. A. Ignat'yeva, and S. G. Kalashnikov

"Zhur Eksper i Teoret Fiz" Vol XXII, No 4, pp 385-399

Elect resistance of thin wires of gold, silver, copper, platinum and tungsten was studied for current pulses of duration of the order of tens of microseconds and for current densities up to 5.10^6 A/sq cm, depending on energy introduced into the wires. It was found that in the case of gold,

21-T21

silver and copper the resistance coincides with that down to low currents. In case of platinum and tungsten for current densities over 1.10^6A/sq cm the resistance increases rapidly. The rise increases with a lowering of temp. Indebted to N. N. Sobolev and N. A. Pekar. Received 20 Jul 51.

21-T21

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KALASHNIKOV, S. G.

USSR/Physics - Semiconductivity May 52

"Effect of Surface on Type of Electric Conductivity of Semiconductor," S. G. Kalashnikov, Ya. Ye. Pokrovskiy, Res Inst of Phys, Moscow State U

"Zhur Tekh Fiz" Vol XXII, No 5, pp 883, 884

Describes results of measuring thermoelectromotive force in various samples of electron semiconductors. In the case of fine-pressed powder, the electron cond changed into hole cond. These tests clarify results obtained by Granwelle and Hosarth (cf. Proc Phys Soc, 64 B, 488, 1951) who observed change of

222T90

sign of cond during polishing of surface of lead sulfide and germanium. Letter to the editor, received 6 Feb 52.

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KALASHNIKOV, S. G.

IVERONOVA, V. I.; KALASHNIKOV, S. G.; YAKOVLEV, Ya.

Physics

Course in general physics. Vols. 1-3. Ye. S. Frish, A. V. Timoreva. Reviewed by V. I. Iveronova, S. G. Kalashnikov, Ya. Yakovlev. Sov. kniga No. 2, 1953.

Monthly List of Russian Accessions, Library of Congress, June 1953. Uncl.

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KALASHNIKOV, Sergey Grigor'yevich; GRIGOROVA, V.A., redaktor; MURASHOVA, N.Ya., tekhnicheskiy redaktor

[Electricity] Elektrichestvo. Moskva, Gos. izd-vo tekhniko-teoret. lit-ry, 1956. 66 p. (Obshchii kurs fiziki, vol.2) (MLRA 10:2)
(Electricity)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

Kalashnikov, S. G.

G

USSR / Electricity

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9709

Author : Kalashnikov, S.G.
Inst : Not given
Title : Recombination of Electrons and Holes in the Presence of Traps of Various Types.'

Orig Pub : Zh. tech. fiziki, 1956, 26, No 2, 241-250

Abstract : The author considers the case of absence of equilibrium between the electrons and the conductivity band and the holes in the valence band and the electrons (holes) and traps. There are several types of traps (with different cross sections for electron capture). Direct exchange of electrons between traps is excluded. The concentration of the non-equilibrium carriers is considered small compared with the majority ones.

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KALASHNIKOV, S. -DR.

"Il comportamento in frequenza dei diodi al germanio per basse' tensioni alternate" a paper submitted at the Third International Congress and Exhibition of Electronics and Nuclear Energy, Rome, Italy, 22 Jun-7 Jul 57.

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

Kalashnikov, S.G.

AUTHORS Kalashnikov, S.G., L'vova, Ye.Yu., Ostroborodova, V.V., 57-9-1/40
TITLE The Electrical Properties of Germanium with an Admixture of Zinc. (Elektricheskiye svoystva germaniya s primes'yu tsinka. Russian)
PERIODICAL Zhurnal Tekhn. Fiz., 1957, Vol 27, Nr 9, pp 1925-1930 (U.S.S.R.)

ABSTRACT The influence exercised by zinc admixtures upon Hall's mobility of holes, the drift mobility of electrons, and on the recombination velocity of non-balanced electrons in germanium is investigated. A comparison of the results obtained for Hall's mobility of holes and the analogous data for once charged centers shows that the amount of mobility is about proportional to the square of the charge of dispersing centers. It is stated that the alloy of germanium and zinc causes no effective recombination centers, for which reason zinc is a good aloying element for the production of hole-germanium with low resistance but with a long life of the electrons. It is shown that the upper limit of the cross section for zinc-atom-recombination in electrons does not exceed 10^{-19} cm^2.
There are 3 figures, 1 table, and four Slavic references.

ASSOCIATION Moscow State University.
(Moskovskiy gosudarstvennyy universitet.)
SUBMITTED April 8, 1957
AVAILABLE Library of Congress.
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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KALASHNIKOV, S. G.
Institute of Radio and Electronics, Acad. Sci., Moscow, U. S. S. R.

"Studies of the Recombination of Electrons and Holes in Germanium."

paper submitted at Intl.' Conf. on Semiconductors,(IUPAP) 18 - 22 Aug 58, Rochester, New York.

Abstract available.
Translation A-3113739

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

AUTHORS: Kurova, I. A., Kalashnikov, S. G. 57-2-10/32

TITLE: The Ionization Energy of Bismuth and Thallium in Germanium (Energiya Ionizatsii vismuta Talliya v Germanii)

PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1958, Vol. 28, Nr 2, pp. 256-258 (USSR).

ABSTRACT: The temperature-dependence of the resistance of germanium alloyed with bismuth and thallium at a concentration of 7.10^{14} to 6.10^{15} cm^{-3} was investigated here. The measurements were made in a cryostat with preheater which was connected with the sample by a quartz-monocrystal. The temperature varied from 4,2 to 20°K and was controlled by means of an angle thermometer with an accuracy up to 1%. At more than 7°K the resistance was measured with the aid of a highly resistive potentiometer according to the compensation method. Welded-on-tin-spheres (contact-diameter 0,2 - 0,3 mm) served as potential probes. At lower temperatures the resistance was determined by means of the electrometer ЭМУ - 3 by comparison with a standard resistance. From the specific resistance over temperature curves is to be seen that the measurements according to the compensation method yield the same gradient as the electrometric measurements and that a change in the length of the sample does not have any influence upon this gradient. The formula from reference 3 was used

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The Ionization Energy of Bismuth and Thallium in Germanium.

57-2-16/32

for determining the ionozation-energy of for the samples of the p-type. From the values, summarized in a table, for the ionization energy in antimony and zinc is to be seen that they agree with the data given in publications (0,0097 eV in reference 1 and 0,03 eV in reference 4). The ionization energies in bismuth and thallium lie near the ionization energies of other elements of the 3rd and 5th with a high distribution coefficient. The obtained results show that the local lattice-deformations which are caused by the penetration of foreign atoms with a different atom-radius do not markedly influence the ionization-energy (at least in the case of weakly bound electrons(holes) and do not disturb the use of a hydrogen-like model for the local levels. The present measurements were performed in the Cryoscopic-Laboratory of the State University, Moscow. The work was advised by A. I, Shal'nikov. V. G. Alekseyeva placed the samples at the authors' disposal.
There are 1 figure, 1 table, and 6 references.

ASSOCIATION: Moscow State University, Physics Department, (Moskovskiy gosudarstvennyy universitet. Fizicheskiy fakultet). None Soviet

SUBMITTED: July 1, 1957.

AVAILABLE: Library of Congress.

Card 2/2 1. Crystals-Ionization 2. Bismuth 3. Thallium

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

Investigation of the Photo-Magneto-Electric Effect as a Method for the Determination of the Volume Length of Diffusion in Germanium SOV 57-28-7-4/35

part of the sample (R_o) and the PME-voltage (V) were measured. R_o was measured in separate experiments with the aid of sound devices and a potentiometer. The experiments showed that in the case of samples with admixtures the PME-voltage of the illumination is proportional up to its maximum value ($\sim 1.10^{17}$ pairs/cm^2 sec.). In the case of samples of the same kind a disturbance of the linear dependence was observed at $\sim 10^{16}$ pairs/cm^2 sec. Afterwards the PME-voltage was almost independent of the illumination. The PME-voltage was proportional to the total number of photons. The experiments showed that a strict proportionality dominates between V and the magnetic field strength H. In the case of a change of direction of the field V maintained its value, changed, however, its sign. This points to the absence of noticeable quadratic effects. The method mentioned was compared to the photoelectric method (Ref 31) and it is shown that the results of the two methods agree satisfactorily. The method given has moreover the following advantages: it does not subject the contacts to considerable wear, it permits to carry out measurements of very small diffusion lengths

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KALASHNIKOV, S.G.; TISSEN, K.P.

Volume recombination in germanium alloyed with aluminum. Zhur. tekh. fiz. 28 no.9:1890-1895 S '58. (MIRA 11:10)

1.Moskovskiy gosudarstvennyy universitet, Fizicheskiy fakul'tet, Kafedra poluprovednikov.
(Germanium-aluminum alloys--Electric properties) (Semiconductors)

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"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

ALEKSEYEVA, V.G.; KARPOVA, I.V.; KALASHNIKOV, S.G.

Effect of their concentration on the lifetime of electrons and holes in germanium. Fiz. tver. tela 1 no.4:529-534 '59.
(MIRA 12:6)

1. Institut radiotekhniki i elektroniki, Moskva.
(Germanium)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

ZHDANOVA, N.G.; KALASHNIKOV, S.G.; MOROZOV, A.I.

Effect of temperature on the rate of recombination of electrons and holes on copper atoms in germanium. Fiz. tver. tela 1 no.4: 535-544 '59. (MIRA 12:6)

1. Institut radiotekhniki i elektroniki AN SSSR, Moskva.
(Copper) (Germanium)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8"

"APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000620020003-8

KALASHNIKOV, S.G.; TISSEN, K.P.

Recombination of electrons and holes on nickel atoms in germanium.
Fiz. tver. tela 1 no.4:545-552 '59. (MIRA 12:6)

1.Moskovskiy gosudarstvennyy universitet, Fizicheskiy fakul'tet.
(Nickel) (Germanium)

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24.7600

~~9 (3)~~ 67318

AUTHORS: Kalashnikov, S. G., Morozov, A. I. SOV/181-1-8-23/32

TITLE: Temperature Dependence of the Electron Capture Coefficient in the Case of the Medium Level of Copper in Germanium

PERIODICAL: Fizika tverdogo tela, 1959, Vol 1, Nr 8, pp 1294 - 1296 (USSR)

ABSTRACT: The authors investigated the temperature dependence of the capture coefficient of level C_{n2} by measuring the temperature dependence of electron lifetime τ in sufficiently alloyed p-type germanium samples corresponding to the flat section on the concentration dependence of lifetime. In this case (i.e., with small equilibrium perturbation, low trap concentration $\tau = (NC_{n2})^{-1}$ holds, N denoting copper atom concentration; C_{n2} temperature dependence is ascertained directly from the temperature dependence of τ. For this purpose 10 germanium crystals (hole concentration between 3.10^{14} and 1.10^{16} om^{-3}) alloyed with gallium and boron were investigated. After copper injection lifetime decreased to about 1/10 to 1/20 of its original value; it was measured in a cryostat. Electron lifetime was

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Temperature Dependence of the Electron Capture Coefficient in the Case of the Medium Level of Copper in Germanium

SOV/181-1-8-23/32

determined by simultaneous measurement of the photo-electromagnetic effect and photoconductivity as well as by the method of steady photoconductivity. In the latter case the temperature dependence of the surface recombination rate was also measured in order to estimate the respective correction. The typical lifetime-versus-temperature curves plotted in a graph show that the capture coefficient C_{n2} slightly decreases with decreasing temperature. This result does not agree with those of R. Baum et al. (Ref 4). The temperature dependence determined from the curves of the photomagnetic effect can be described by the relation $S_{n2} \sim T^{-2}$. In all samples the limit of lifetime has been attained already at room temperature. Hence, the recombination level is probably at least 0.32 ev apart from the valency band. The absolute value of the capture coefficient at 300°K was $C_{n2} = 2.10^{-10}$ $cm^3 sec^{-1}$ with a mean spread of $\mp$ 15%. To this value corresponds the capture cross section $S_{n2} = 1.5.10^{-17} cm^2$.

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24.7700
~~24(5), 24(6)~~

SOV/181-1-9-29/31

AUTHORS: Kurova, I. A., Kalashnikov, S. G.

TITLE: On the Electrical Conductivity of Germanium at Low Temperatures

PERIODICAL: Fizika tverdogo tela, 1959, Vol 1, Nr 9, pp 1476 - 1479 (USSR)

ABSTRACT: The anomalies occurring at low temperatures in germanium with impurity concentrations of $\sim 10^{15}$-$10^{18}/cm^3$, had already been investigated earlier several times, as briefly shown in the introduction. The authors investigated high-ohmic n- and p-type germanium samples with $\sim 3.10^{13}/cm^3$ and antimony-alloyed germanium samples with $\sim 1.10^{14}$ - $3.10^{15}/cm^3$; they measured the Hall constant, the resistivity and the change of resistance in the magnetic field. The preparation of the samples is described. The voltage was measured by a Compton electrometer. The field inside the samples did not exceed 0.2 v/cm and was for all samples within the range of validity of Ohm's law. Half-constant and change of resistance in the magnetic field were measured at field strengths up to 3500 oersteds. Figures 1 and 2 show typical curves for

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antimony-alloyed samples (the characteristics of the samples are given in a table). It is shown that for all samples the law of resistance growth changes at about 4°K; the activation energy drops from a value of ~ 0.01 ev (impurities of the V group) to ~ 5.10^{-4} ev in high-ohmic samples. The temperature dependence of the Hall constant and the change of resistance in the magnetic field of samples with an impurity concentration $< 1.5.10^{15}/cm^3$ deviates strongly from the dependence for samples with high concentrations. The Hall constant has no maximum for high-ohmic samples and changes by approximation after the same law as the resistance. In the range of 500 - 5000 oersteds it does not depend on the magnetic field. For low-ohmic samples the same ratios were found as already established in references 1-8. The Hall mobility $\mu = R/\varrho$ is of the order of $10^5 cm^2/v.sec$ for low impurity concentration samples at $T < 4°K$. The results obtained show that in high-ohmic germanium with impurity concentrations $\sim 10^{15} cm^{-3}$ and lower at low temperatures the weak conductivity is conserved in the ground band; in the samples investigated

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~~24 (6)~~ 24.7600

66286

AUTHORS: Kalashnikov, S. G., Tissen, K. P. SOV/181-1-11-21/27

TITLE: Capture Cross Sections of Electrons and Holes for Nickel and Germanium Atoms

PERIODICAL: Fizika tverdogo tela, 1959, Vol 1, Nr 11, pp 1754-1757 (USSR)

ABSTRACT: The germanium samples (N-type) were prepared by V. G. Alekseyeva. Germanium was alloyed with phosphorus. Nickel was added by diffusion at 520°C (nickel concentration $\sim 2.10^{12}/cm^3$). The life period was established by once measuring the photoelectromagnetic effect according to reference 1. The photoelectric conductivity was also measured according to reference 1. The ratio f (Hall mobility : drift mobility) was calculated according to the data in reference 3 and it is (in the temperature range investigated) between 1.1 and 1.3. To eliminate the disturbing effect of adhesion, the light intensity was increased. There is an intensity at which adhesion completely disappears and at which the injection levels $\frac{\delta n}{n_o}$ are still

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Capture Cross Sections of Electrons and Holes for Nickel and Germanium Atoms

very small. In this case the recombination is practically caused only by the nickel atoms. This proves that even nickel-ions with negative charge are no adhesion centers for holes. Figure 1 contains a graphical illustration of the injection levels for various temperatures. They are maximum values, because they were measured for high-ohmic samples. Figure 2 illustrates the temperature dependence of the life period τ of 6 samples with varying concentrations of the electrons n_o which are in equilibrium. The capture cross section S_{p2} ($\simeq 2.10^{-14} cm^2$) was determined from the dependence $\tau_{po2} \equiv (N_t \, v \, S_{p2})^{-1}$, where τ_{po2} are the threshhold values summarized in table 1, $v = 1.3.10^7 cm.sec^{-1}$, and N_t is the nickel concentration. From the foregoing the capture cross section of the two nickel levels was calculated using the data from reference 1:

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Capture Cross Sections of Electrons and Holes for Nickel and Germanium Atoms SOV/181-1-11-21/27

S_{n1} (low level) $\simeq 2.10^{-15} cm^2$, $\frac{S_{n1}}{S_{n2}} \simeq 7.5$. The cross sections S_{p2}, S_{n1} and S_{n2} do practically not depend on the concentration of the charge carriers, which are in equilibrium, nor on temperature. Contrary to (1) f was taken into consideration in the calculation of the cross section. Finally, it has to be mentioned that in reference 9 $S_{n1} < S_{n2}$ was observed, while in the present study it is $S_{n1} > S_{n2}$. This discrepancy has still to be clarified. There are 2 figures, 1 table, and 9 references, 3 of which are Soviet.

ASSOCIATION: Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta (Physics Department of the State University, Moscow)

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Capture Cross Sections of Electrons and Holes for Nickel and Germanium Atoms

SOV/181-1-11-21/27

SUBMITTED: June 18, 1959

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66289

~~24(3)~~ 24.7700 SOV/181-1-11-24/27

AUTHORS: Kalashnikov, S. G., Konstantinesku, K.

TITLE: On a Possible Method of Determining the Capture Cross Section Ratio of the Recombination Centers in Semiconductors

PERIODICAL: Fizika tverdogo tela, 1959, Vol 1, Nr 11, pp 1763-1766 (USSR)

ABSTRACT: In the present paper the authors describe a method of determining the capture cross section ratio of recombination centers (traps) in semiconductors. The method is based on the measurement of the temperature T and the equilibrium concentration of electrons and holes (n_0, p_0) at which the lifetime τ of the surplus (nonequilibrium) electrons and holes is independent of their respective concentrations (injection levels). It must further be assumed that the trap concentration is sufficiently low ($\delta p \simeq \delta n$), the measurement can be carried out under steady conditions, and the capture cross section concentration is independent. If this is the case, the capture cross section can be described in terms of T, n_0, and p_0. If (a) the trap is able to capture one electron only, τ is independent of the injection level $x = p/(n_0+p_0)$ if $n_1 - p_0 = \gamma(n_0-p_1)$, $\gamma = C_p/C_n \cdot C_p/C_n =$

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On a Possible Method of Determining the Capture Cross Section Ratio of the Recombination Centers in Semiconductors

$= N\alpha_{n,p} = N \langle v S_{n,p} \rangle$, where N denotes the concentration of traps, $\alpha_{n,p}$ the capture coefficient for electrons and holes respectively, v the thermal velocity, $S_{n,p}$ the capture cross sections. n_1 and p_1 are the concentrations of the electrons and holes in the zone, if the Fermi level coincides with the energy level of the electrons in the trap. Herefrom the following conditions are derived: $p_0' = n_1$, $p_0'' = \gamma p_1$. If (b) the trap is able to capture several electrons, the complicated equations (3) - (6) are derived for the condition that τ is independent of x. Changes in τ can be determined by measuring the current of a short circuit photoelement, the terminal layer of which consists of the material investigated. Experimental conditions are described in brief. A diagram for p- and n-germanium is given in figure 1 showing the dependence of the short circuit current on the light intensity for various temperatures. Since the temperature affects the character of the dependence of τ on x, one can establish the condition under which τ is independent of

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B006/B063

24.7700

AUTHORS: Kalashnikov, S. G., Kurova, I. A.

TITLE: Electrical Conductivity of Germanium at Low Temperatures

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 8, pp. 1949 - 1950

TEXT: The present article follows a previous publication (Ref. 1) in which the authors gave the results of measurement of the resistivity, the Hall constants, and the change in resistivity of Ge samples with Sb impurities of 8.10^{13} - $2.9 \cdot 10^{15}$ cm^{-3} placed in a magnetic field. Samples of higher impurity concentrations ($2.7 \cdot 10^{15}$ - $2.9 \cdot 10^{15}$) showed a typical impurity conductivity at the temperature of liquid helium. This is in agreement with the results of other authors. Further studies on samples of impurity concentrations of $\sim 10^{15} cm^{-3}$ showed that these samples had a remanent conductivity owing either to long-wave rays scattered in the instrument or to thermal radiation emitted by tubes. The intensity was

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Electrical Conductivity of Germanium at Low Temperatures

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was estimated to be $\sim 10^{-10}$ w/cm^2. The accompanying figure shows typical curves (Q and R as a function of 1/T) of samples exhibiting such a remanent conductivity. These curves were recorded by a modified instrument in which the effects of scattered thermal radiation were considerably reduced. The temperature dependences of the Hall constant and resistivity in the presence of this scattered radiation are shown for comparison. The curves differ considerably. After the elimination of the scattered radiation, Q and R vary according to an exponential law with an activation energy of about 0.01 ev, and show no anomalies. The change in resistivity in a magnetic field for the two cases is also to be seen. In the presence of this radiation, the Hall constant has no maximum, and the carrier mobility calculated from Q and R retains its high value in the entire temperature range. The samples to which the data and curves refer are indicated by 1-1 and 4-2. They show different behaviors which are discussed here. Their composition is not given. The author thanks A. I. Shal'nikov who made these experiments possible and gave him valuable advice. There are 1 figure and 1 Soviet reference.

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B004/B056

9.4240 (1193,1160,1331)

AUTHORS: Kalashnikov, S. G., Mednikov, A. K.

TITLE: The Effect of Copper Impurity Atmosphere at Dislocations in Germanium Upon Recombination

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 9, pp. 2058-2065

TEXT: In the present paper, the results obtained in an earlier paper (Ref. 1) are checked, according to which copper impurities enter into interaction with structural defects and reduce the recombination rate. From n-type germanium single crystals copper was extracted by means of lead at 1200-1500°C, after which known quantities of copper were added to the germanium. Measurements were carried out of the density N_d of the linear dislocations ($5 \cdot 10^2$ - $2.8 \cdot 10^4$ cm^{-2}) by counting the pores formed during etching (Fig. 1), and of the resistivity ρ and the diffusion length L. As shown by Fig. 2 and Table 1, a maximum of diffusion length occurs at an optimum density N_m of the copper atmosphere. At this point the effect of defects upon recombination is the lowest. It follows from Fig. 3 that with

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86429
S/181/60/002/011/013/042
B006/B056

24.7700 (1035, 1043, 1143)

AUTHORS: Kalashnikov, S. G. and Tissen, K. P.

TITLE: Adhesion and Recombination on Many-electron Trapping Centers in Semiconductors

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 11, pp. 2743-2752

TEXT: It was the aim of the authors to carry out a theoretical investigation of the kinetics of the trapping and recombination of electrons and holes on many-electron centers in non-degenerate semiconductors. Equations are derived for the recombination rate and lifetime of electrons and holes under steady conditions in the case of an arbitrary concentration of trapping centers with two energy levels. The conditions necessary for bringing about adhesion as well as the effect of adhesion upon the lifetime measurement by different methods are studied. The theoretical investigations led to the following results: In the case of an arbitrary position of the energy levels of the centers and an arbitrary position of the equilibrium Fermi level, the adhesion phenomena are, like in the case of simple centers, much more strongly marked if the trapping cross section

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Adhesion and Recombination on Many-electron Trapping Centers in Semiconductors

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levels and its temperature dependence. V. D. Yegorov is thanked for discussions. There are 3 figures and 11 references: 4 Soviet, 6 US, 1 British, and 1 German.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: June 3, 1960

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9,4160 (3201,1003,1137)

AUTHORS: Kalashnikov, S. G. and Morozov, A. I.

TITLE: Investigation of the Phenomenon of Adhesion on Copper Atoms in Germanium

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 11, pp. 2813-2820

TEXT: The authors give a report on adhesion effects in copper-doped n-type germanium, which were studied by the use of steady methods. The photoconductivity, the photomagnetic effect, and its compensation were investigated, and the diffusion lengths were directly measured. The authors endeavored to estimate the contribution of various factors to the production of adhesion in n-type germanium. It was found that adhesion is mainly due to trivalent copper ions forming three acceptor levels in germanium. These copper ions have very different trapping cross sections for holes and electrons. The method applied is theoretically described in the introduction, and in the following some experimental data are given. The specimens which were no less than 20-50 diffusion lengths wide and no less than 4 diffusion lengths thick, were exposed to white light ($\nu > 72$ cps); the

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Investigation of the Phenomenon of Adhesion on Copper Atoms in Germanium

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contact region was not exposed. 15 crystals alloyed with antimony or phosphorus and having electron concentrations of $6 \cdot 10^{14} - 4 \cdot 10^{16}$ cm^{-3} were examined. The copper was diffused in at 520 - 650°C. The copper concentration was determined by measuring the Hall constant. The magnetic field was chosen to be smaller than 3000 gauss, in order that $(\mu_{(n,p)}B/c)^2 \ll 1$ remained (μ - mobility; $c = n_o/p_o$). The characteristic times were determined from the photomagnetic effect (τ_{PEM}), the photoconductivity (τ_{PC}), and the compensation of both effects (τ_c), and their interrelations with the carrier lifetimes τ_n and τ_p were studied. Theoretically, $\tau_c = \tau_{PC}^2/\tau_{PEM}$; $\tau_{PEM} \cong \tau_p$; $\tau_{PC} = k\tau_p$; $\tau_c = k^2\tau_p$; and $k = 1 + \chi$. Fig. 1 shows $\tau = f(1/T)$; the curves may be divided into three sections: into a high-temperature section where $\chi < 1$ and $\tau_c \sim \tau_p$. In this section adhesion is low, and the lifetime decreases with decreasing temperature. In the section of medium temperatures $\chi > 1$, $f < 1$, $\tau_c > \tau_p$; τ_c increases with decreasing temperature. In the low-temperature section, $\chi > 1$ and $f \cong 1$ ($f = n_o/(n_o+n_1)$).

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Investigation of the Phenomenon of Adhesion on Copper Atoms in Germanium

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Fig 2 shows τ_{PC} and τ_{PEM} as functions of ligh intensity for the electron equilibrium concentration $n_o = 5 \cdot 10^{14}$ cm^{-3} and the center concentration $N = 8 \cdot 10^{13}$ cm^{-3}. Whereas τ_{PEM} and τ_{PC} at 300°K form parallel, adjacent, horizontal straight lines, the lines representing these two quantities at 100°K differ in their angle of inclination, position, and tendency. Fig. 3 shows the adhesion factor as a function of light intensity; k was determined by a simultaneous measurement of τ_o and τ_{PEM}. Fig. 4 shows the effect of exposure on τ_o and τ_{PEM}, and Fig. 5 shows $k = f(1/T)$ for two low-impedance specimens. The investigations led to the conclusion that copper atoms in n-type germanium cause both adhesion and recombination. Consequently, no distinction can be made between recombination and adhesion centers. The ratio between the trapping cross sections for electrons and holes for the top (third) Cu level was determined to be $\geq 10^3$ at room temperature, and was found to increase with decreasing temperature. The occurrence of adhesion at increased temperature is related not only to the temperature dependence of the trapping cross sections, but also to the increase of ion concentration with high states of charge. There

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KALASHNIKOV, Sergey G.; ADEYEVA, N. G.; KARPOVA, I. V.; and LANDSBERG, E. G.

"Recombination Properties of Manganese and Gold in Germanium."

Report to be submitted for the Intl. Conference on Photoconductivity, IUPAP, Cornell University, Ithaca, N. Y., 21-24 Aug 1961.

Kalashnikov, S. G. - Hd, Semiconductor Group, Moscow State Univ.

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9,4177 (also 1395)

AUTHORS: Kalashnikov, S. G. and Mednikov, A. K.

TITLE: Distribution of nickel in the system germanium-lead and its interaction with structural defects

PERIODICAL: Fizika tverdogo tela, v. 3, no. 1, 1961, 224-229

TEXT: It is known that Ni impurity atoms in germanium behave similarly as copper atoms. As, therefore, an interaction of copper atoms with structural defects (change in recombination rate) is known, such interaction may also be assumed in the case of nickel. A verification of this assumption was, besides determining the Ni distribution coefficient in the system Ge-Pb in the range of 625-850°C, the aim of the present paper. This distribution coefficient had, as far as the authors knew, not been determined up to that time. It is defined by $K = X_s/X_l$, where X_s is the fraction of Ni atoms in the solid germanium alloy, and X_l is the fraction of Ni atoms in the germanium-saturated Pb-Ni melt. For determining X_s, the Hall constant before and after introduction of nickel was measured (at

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Distribution of nickel in the...

temperature for 28 hr, the nickel hereby diffusing into germanium. The following results were obtained:

Number of specimen	initial specimen		after heating with pure Pb 625°C		after heat treatment (50 hr)		after introduction of Ni (28 hr)	
	ρ	L	ρ	L [mm]	ρ	L	ρ	L [mm]
14	2.0	0.9	2.0	0.2	2.0	0.2	2.0	0.5
15	1.1	0.7	1.1	0.3	1.1	0.3	1.1	0.6
16	1.4	0.8	1.4	0.3	1.4	0.3	1.4	0.7
17	1.3	0.1	1.3	0.2	1.3	0.2	1.3	0.2

All specimens had n-type conductivity. Numbers 14, 15, and 16 were nickel-coated, while 17 was not. In the course of a further series of experiments, the specimens were first treated with pure lead (for the purpose of removing Cu), after which Ni was introduced in doses (from Pb-Ni alloy with known Ni concentration at 625°C). The results obtained are shown in Table 3. They showed that small quantities of nickel may interact with the defects, and that this interaction diminishes the effect produced by lefects upon recombination. The nature of the defects was not determined.

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Distribution of nickel in the...

There are 3 figures, 3 tables, and 9 references: 4 Soviet-bloc and 4 non-Soviet-bloc.

ASSOCIATION: Institut radiotekhniki i elektroniki AN SSSR (Institute of Radio-engineering and Electronics, AS USSR)

SUBMITTED: July 11, 1960

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Distribution of nickel in the...

Table 1

После обработки чистым свинцом 1)		После введения никеля 2)					
3) № образца	4) концентрация электронов n_0, $см^{-3}$	5) концентрация атомов Ni в свинце N_1, $см^{-3}$	6) температура, °C	7) тип проводимости	8) концентрация основных носителей, $см^{-3}$	9) концентрация атомов Ni N_s, $см^{-3}$	10) коэффициент распределения K
1	$1.3 \cdot 10^{14}$	$6.3 \cdot 10^{18}$	625	n	$1.1 \cdot 10^{14}$	$2.0 \cdot 10^{13}$	$2.3 \cdot 10^{-6}$
2	$2.1 \cdot 10^{14}$	$1.6 \cdot 10^{19}$	625	n	$1.5 \cdot 10^{14}$	$5.0 \cdot 10^{13}$	$2.3 \cdot 10^{-6}$
3	$1.3 \cdot 10^{14}$	$6.3 \cdot 10^{17}$	700	n	$1.2 \cdot 10^{14}$	$6.1 \cdot 10^{12}$	$7.1 \cdot 10^{-6}$
4	$1.6 \cdot 10^{14}$	$2.0 \cdot 10^{18}$	700	n	$1.3 \cdot 10^{14}$	$2.0 \cdot 10^{13}$	$7.3 \cdot 10^{-6}$
5	$1.6 \cdot 10^{14}$	$6.3 \cdot 10^{18}$	700	n	$8.7 \cdot 10^{13}$	$6.2 \cdot 10^{13}$	$7.2 \cdot 10^{-6}$
6	$1.1 \cdot 10^{14}$	$2.7 \cdot 10^{19}$	700	p	$1.5 \cdot 10^{14}$	$2.5 \cdot 10^{14}$	$6.9 \cdot 10^{-6}$
7	$1.3 \cdot 10^{14}$	$8.1 \cdot 10^{19}$	700	p	$1.3 \cdot 10^{14}$	$2.5 \cdot 10^{14}$	$2.3 \cdot 10^{-6}$
8	$7.8 \cdot 10^{13}$	$6.3 \cdot 10^{18}$	780	p	$1.0 \cdot 10^{14}$	$1.7 \cdot 10^{14}$	$2.0 \cdot 10^{-5}$
9	$8.5 \cdot 10^{13}$	$6.3 \cdot 10^{18}$	800	p	$1.5 \cdot 10^{14}$	$2.2 \cdot 10^{14}$	$2.6 \cdot 10^{-5}$
10	$1.5 \cdot 10^{14}$	$1.6 \cdot 10^{19}$	800	p	$4.3 \cdot 10^{14}$	$6.2 \cdot 10^{14}$	$2.8 \cdot 10^{-5}$
11	$1.6 \cdot 10^{14}$	$6.3 \cdot 10^{18}$	825	p	$1.3 \cdot 10^{14}$	$2.8 \cdot 10^{14}$	$3.3 \cdot 10^{-5}$
12	$1.3 \cdot 10^{14}$	$6.3 \cdot 10^{18}$	850	p	$2.8 \cdot 10^{14}$	$4.1 \cdot 10^{14}$	$4.8 \cdot 10^{-5}$
13	$6.2 \cdot 10^{14}$	$1.6 \cdot 10^{19}$	850	p	$4.2 \cdot 10^{14}$	$1.1 \cdot 10^{15}$	$4.9 \cdot 10^{-5}$

Legend to Table 1: 1) after treatment with pure Pb; 2) after introduction of Ni; 3) number of specimen; 4) electron concentration; 5) Ni concentration in lead N_1 ($см^{-3}$); 6) temperature; 7) type of conductivity; 8) concentration of majority carriers; 9) concentration of Ni atoms N_s; 10) K.

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Distribution of nickel in the...

Legend to Table 3:
ρ - resistivity; L - diffusion length (mm);
N_d - dislocation density;
1) initial specimen.

Таблица 3 (Table 3)

№ образца	Концентрация Ni и свинца, $см^{-3}$ N_i	Тип проводимости	Удельное сопротивление, ρ, ом · см ρ	Диффузионная длина L, мм L	Плотность дислокаций N_d, $см^{-2}$ N_d
18	1) Исходный образец	n	1.7	0.68	$5 \cdot 10^3$
	—	n	1.7	0.19	
	$2.2 \cdot 10^{16}$	n	1.7	0.19	
	$4.7 \cdot 10^{16}$	n	1.7	0.19	
	$1.1 \cdot 10^{17}$	n	1.7	0.31	
	$3.0 \cdot 10^{17}$	n	1.7	0.52	
	$7.6 \cdot 10^{17}$	n	1.7	0.28	
	$1.0 \cdot 10^{19}$	n	1.8	0.07	
19	1) Исходный образец	n	0.33	0.35	$8 \cdot 10^3$
	—	n	0.33	0.11	
	$1.1 \cdot 10^{17}$	n	0.33	0.11	
	$2.5 \cdot 10^{17}$	n	0.33	0.15	
	$4.6 \cdot 10^{17}$	n	0.33	0.22	
	$1.0 \cdot 10^{18}$	n	0.33	0.16	
	$3.0 \cdot 10^{18}$	n	0.33	0.09	

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ALEKSEYEVA, V.G.; KARPOVA, I.V.; KALASHNIKOV, S.G.

Recombinations on gold atoms in p-type germanium. Fiz. tver. tela 3 no. 3:964-971 Mr '61. (MIRA 14:5)

1. Institut radiotekhniki i elektroniki AN SSSR, Moskva.
(Crystal lattices) (Germanium) (Gold)

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